

REMARKS

The Office Action dated February 5, 2007 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 10 and 19 are amended to more particularly point out and distinctly claim the subject matter of the present invention. Support for the amendments is found at least in the first sentence of paragraph [0031], and in the last sentence of paragraph [0107] of the present specification. No new matter is added. Claims 1-24 are respectfully submitted for consideration.

The Office Action rejected claims 1-24 under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,128,328 to Schilling (Schilling). Applicants submit that Schilling fails to disclose or suggest all of the features of any of the pending claims. Applicants note that although claim 22 is rejected in paragraph 2 of the Office Action, claim 22 is not addressed in paragraphs 2-17. Therefore, it is unclear if claim 22 is being rejected in this section. In the event that claim 22 is to be rejected under 35 U.S.C. 102, Applicants request a new non-final Office Action that clearly identifies which claims are being rejected under each section.

Claim 1, from which claims 2-9 and 23 depend, is directed to a cellular communication system including at least one cell. The cell includes a coverage layer having a fixed coverage area. The cell further includes a capacity layer including a

plurality of carriers, each carrier in the capacity layer having a dynamically variable coverage area.

Claim 10, from which claims 11-18 and 24 depend, is directed to a method of configuring a cellular communication system. A coverage layer for a cell is determined, the coverage layer having a fixed coverage area. A capacity layer for the cell is determined, the capacity layer including a plurality of carriers, each carrier in the capacity layer having a dynamically variable coverage area.

Claim 19, from which claims 20-22 depend, is directed to a base station of a mobile communication system including. The base station includes at least one transmitter unit configured to transmit a carrier at a predetermined power level thereby defining a coverage area of a cell, and further configured to transmit a variable number of carriers thereby defining, at least in part, a capacity of the cell. Each of the variable number of carriers has a dynamically variable coverage area.

Schilling describes a cellular communication system including at least one cell (A, B, C, Fig 5). It further appears to disclose that each cell has a particular coverage area over which a signal transmitted from the base-antenna can be received by a remote unit (col3, lines 54-58). The system in Schilling is set up so that each cell is divided up into N concentric regions which in turn are divided up into M sectors to define M*N concentric sector areas. Each concentric sector area is then assigned a frequency that is different to the frequency assigned to all other adjacent concentric sector areas (see claim 1 and Figure 8). In column 8, lines 31-35 of Schilling, the radii of the concentric regions are

not equal and instead can be adjusted to ensure that the user density in each concentric region is constant. As shown in Figure 4 of Schilling, the area in each concentric ring is then constant rather than the radius.

The concentric sector areas shown in Figure 8 in Schilling are well-organized in a predefined optimal arrangement to reduce the interference between cells, such that no adjacent concentric sector areas are assigned the same frequency. Once the frequencies in each concentric sector area have been allocated, they are fixed. The mobile terminal communicating with the antenna then chooses the frequency of the communication based on its position within the cell, and the frequency that is assigned to that specific area (see for example column 8, lines 51 to column 9, line 7). It is absolutely essential in Schilling that the area of each concentric sector, although adjustable in setting up the cell (as shown in Figure 4), does not vary after the system is put into use. If any of the carriers were to vary their coverage area while the system was in use, the whole system would break down because adjacent concentric sectors would no longer be guaranteed to communicate on different frequencies and hence the interference from adjacent concentric sector areas would be increased.

Applicants respectfully submit that Schilling fails to disclose or suggest at least the feature of each carrier in the capacity layer having a dynamically variable coverage area, as recited in claims 1, 10 and 19.

Schilling teaches directly towards keeping the areas of the concentric sectors fixed once the system is in use. As discussed above, the system of Schilling would not work if

the coverage area of each carrier was dynamically varying. The teachings of Schilling are directed towards pre-defining the area of each carrier in an optimal arrangement to reduce the interference from adjacent cells (see for example column 10, lines 1 to 17). Thus, Schilling can not be modified to dynamically vary the area of each carrier because then the system would no longer be in the optimal configuration for reducing the interference between adjacent cells without rendering Schilling unsatisfactory for its intended purpose. The aim of Schilling is to increase the Signal to Interference ratio (S/I), which is done by fixing the areas of each carrier to the optimum configuration. Dynamically varying these coverage areas would degrade the system disclosed by Schilling. Thus, Applicants submit that this feature is neither disclosed nor suggested in Schilling.

Applicants submit that because claims 2-9, 11-18, and 20-24 depend from claims 1, 10 and 19, these claims are allowable at least for the same reasons as claims 1, 10 and 19, as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that Schilling fails to disclose or suggest all of the features of claims 1-24. Accordingly, withdrawal of the rejection under 35 U.S.C. 102(b) is respectfully requested.

The Office Action rejected claim 22 under 35 U.S.C. 103(a) as being obvious over Schilling, in view of US Patent Publication No. 2004/0203837 to Lawrence (Lawrence). The Office Action took the position that Schilling disclosed most of the features of these claims except power allocated to at least one carrier is configured to reduce in response to

an increase in the variable number of carriers. The Office Action asserted that Lawrence disclosed this feature. Applicants submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features of any of the pending claims. Specifically, Schilling is deficient at least for the reasons discussed above regarding claim 19 and Lawrence fails to cure these deficiencies.

Schilling is discussed above. Lawrence is directed to managing system control signaling to optimize spectrum and other system resources. Lawrence further describes variable power levels that allow cells to be sized according to the subscriber density and demand in a particular region. See paragraph [0002]. However, Lawrence does not disclose or suggest at least the feature of each carrier in the capacity layer having a dynamically variable coverage area, as recited in claim 19. As discussed above, Lawrence merely discloses varying the power levels and minimizing the functionality of the control channel. Thus, Lawrence fails to cure the deficiencies of Schilling.

Based at least on the above, Applicants submit that the cited references fail to disclose or suggest all of the features of claim 22. Accordingly, withdrawal of the rejection under 35 U.S.C. 103(a) is respectfully requested.

Applicants submit that each of claims 1-24 recites features that are neither disclosed nor suggested in any of the cited references. Accordingly, it is respectfully requested that each of claims 1-24 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. E. Brown', is written over a horizontal line.

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